Classroom Copy- Do NOT write on!

CW#15: Midpoint

Geometry

Wednesday September 30th

Define the following terms:

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| Midpoint- |
| Segment Bisector- |
| Bisect- |

SWBAT find the midpoint on a number line.

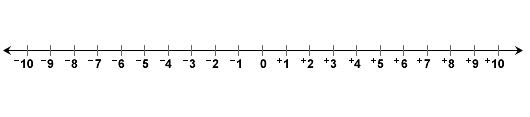
Use the information below to find the midpoint of each line segment.

Point A= -2

Point B= -6

Point C= 10

Point D= 4



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| 1. AB | 2. BD |
| 3. AC | 4. BC |

Use the information below to find the midpoint of each line segment.

Point J= -7

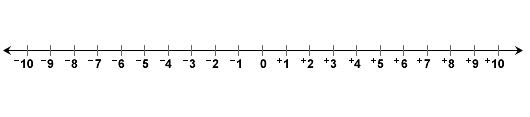
Point K= -4

Point L= -2

Point M= 0

Point N= 3

Point P= 5



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| 5. JM | 6. JP | 7.KP |
| 8. NP | 9. LP | 10. LN |

SWBAT find the midpoint between two points on the coordinate plane, when x or y values are constant.

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| 11. What is the midpoint between Point T(0,0) and R(-4,0)? | 12. What is the midpoint between Point X(0,5) and Y(8,5)? |
| 13. What is the midpoint between Point K(-2,3) and Q(4,3)? | 14. What is the midpoint between Point H(4.2) and F(4,6)? |

SWBAT find the midpoint between two points on the coordinate plane.

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| 21. Point B is located at the origin. Point N is located at (4,3). What is the midpoint from point B to Point N? | |
| 22. What is the midpoint between (2, 14) and (10, 19)? | 23. What is the midpoint between (5,2) and (1,3)? |
| 24. What is the midpoint between (-3,4) and (2,-4)? | 25. What is the midpoint between (-2, -3) and (4,0)? |
| 30. What is the midpoint between (-7,5) and (3,-5)? | |

SWBAT find the other endpoint given a midpoint and an endpoint.

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| 31. Point M is the midpoint of segment HG and is located at (-1,2). Point H is located at (-1,0) What are the coordinates of point G? | 32. Point X is the midpoint of segment TJ and is located at (5,2). Point T is located at (2,2) What are the coordinates of point J? |
| 33. Point B is the midpoint of segment AM and is located at (2,3). Point A is located at (-1,2). What are the coordinates of point M? | 34. Point F is the midpoint of segment QR and is located at (a,b). Point Q is located at (2,2). What are the coordinates of point R in terms of a and b? |

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| CHALLENGE: (Answer in your notebooks)  1) Teresa encountered this problem: “Find the midpoint if the coordinates of the endpoints are (-4, -10) and (6, 7)”.  She proceeded by adding -4 and -10 and dividing by two for the x- coordinate and adding 6 and 7 and dividing by two for the y- coordinate. Her final answer was a (-7, 6.5). Given that Lucy’s response was incorrect, explain the error in her reasoning. Then find the correct answer.  2) ABCD is a rectangle with vertices A(-3, -2), B(-3, 1), C(4, 1), and D(4, -2). Find the midpoint of the diagonal AC.  3) A rectangle has two diagonals, which are line segments linking opposite vertices (corners) of the rectangle. The diagonals of a rectangle are congruent and bisect each other. The diagonals intersect each other at (1, -1). Find the opposite vertex to W(0, 6).  4) A triangle has vertices A(0, -2), B(4, 4) and C(6, -2). A median of a triangle is a line segment from one vertex to the midpoint of the opposite side. For example, A is a vertex and AD is the line segment that bisects BC. Find the coordinates of the midpoint D that is created by the median AD.  5) With the given endpoints (2,5) and (4,9), what is the equation of the line that goes through the original two points? What is the midpoint? |

EXIT SLIP

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| 1) In your own words, explain how to find a midpoint in the coordinate plane. | 2) The endpoints of *CD* are  *C*(–8, –1) and *D*(2, 4). Find the coordinates of the midpoint *M.* |
| 2) The midpoint of *XZ* is *M*(5, –6). One endpoint is *X*(–3, 7). Find the coordinates of endpoint *Z.* | |

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